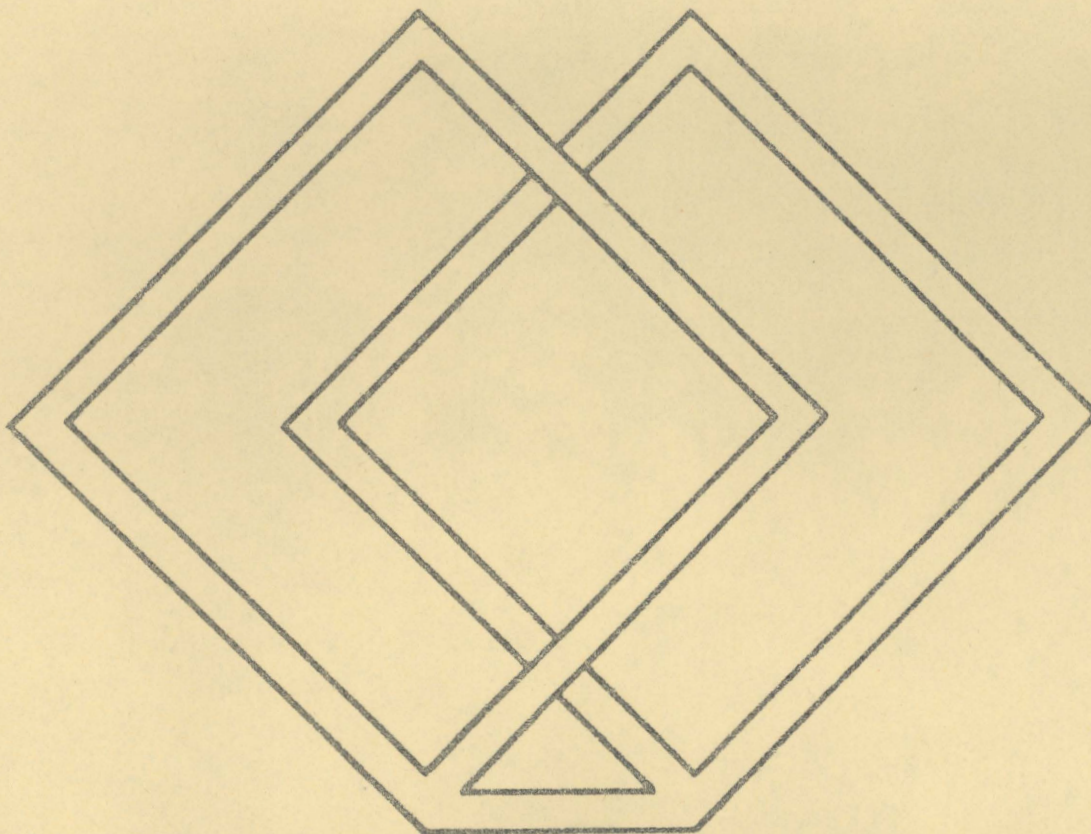


THE JOURNAL OF THE AUSTRALIAN CENTRE FOR UFO STUDIES

P.O Box 229, PROSPECT, S.A. 5082



The Journal of the Australian Centre for UFO studies - Volume 3. Number 5.

September/October 1982.

(C) No part of this publication may be reproduced without prior written consent of ACUFOS, except by UFO organisations. Credit must be given. Articles appearing in this publication are not necessarily the views and opinions of ACUFOS.

INDEX

<u>Item.</u>	<u>Author.</u>	<u>Pages.</u>
Editorial	Frank Gillespie	1.
In Search of Breakthroughs	Mark Moravec	2-8.
Notice to Contributors		8.
ACUFOS Bibliography Service	John Prytz	9-13.

xxxxxxxxxxxxxxxx

Editorial

by Frank Gillespie.

RINGING IN THE CHANGES.

One of the important milestones in Australian ufology was the establishment of the ACUFOS Journal; and Harry Griesberg is to be congratulated for this achievement. The new management of ACUFOS will be introducing some changes in the running of the Centre, but the Journal is not one of them. Every effort will be made to maintain, or even improve the standard of this very worthwhile publication.

As your new and very inexperienced editor, I will undoubtedly make some mistakes (admitting this in an editorial is probably the first). Please bear with me, as I will be doing my best. Hopefully I should improve with practice -- or, even better, find somebody more talented to take over the job.

The new logo on the cover, like its predecessor, has meaning relevant to serious UFO investigation and research. In the next issue, I will reveal what it is. In the meantime, if anyone thinks they have solved the puzzle, they are welcome to write and let me know. There is no prize for getting the right answer -- but any wrong answers could help me in assessing the 'public' I am reaching. At the very least, it would give me some idea of how many people read this 'editorial'.

IN SEARCH OF BREAKTHROUGHSby Mark Moravec

What is the nature and origin of UFOs? Are we any closer to finding the solutions than we were 30 years ago? What is the current state of ufology? Are we heading in the right direction? UFOs and other anomalous phenomena have obviously puzzled many people over many decades. In this paper I intend to look at some of the many issues that arise out of the attempted study of such elusive phenomena. The subjects of my scrutiny are the phenomena, the percipients and the investigators.

The Scientific Approach

The scientific approach to studying UFO phenomena was initially promoted by Hynek (1974) and in the early writings of Vallee (1966 & 1967). For many years following the popularisation of the UFO subject in the late 1940s, there was no scientific study. On the official side, Project Bluebook and the Colorado project appeared to function primarily as stop-gap political measures. On the civilian side, the major UFO groups were preoccupied with uncritically promoting ideas of extraterrestrial visitation and terrestrial conspiracy. It is only in the latter part of the 1970s that a truly scientific approach to studying UFOs has been initiated, as evidenced by such items as the various field investigator manuals, Hendry's (1979) extensive study of UFOs, Haines' (1979 & 1980) contributions to the psychological aspects of the phenomena, and the establishment of scientifically-orientated groups such as ACUFOS. Thus, on the question of whether a scientific approach to UFOs works, we can't say from experience because we have only started on this path.

There have been suggestions that the scientific approach won't work. For example, Salisbury has stated: "Can science solve the UFO mystery? I think that my conclusion, at least today, is that science probably cannot. Science cannot disprove that the UFOs are extraterrestrial or extrahuman. And if the UFOs are being directed by some truly superhuman intelligence, then science probably cannot prove their origin either, because obtaining proof would be dependent on the will of that superintelligence" (Fuller, 1980, p93).

Here, Salisbury is firstly stressing that the extraterrestrial hypothesis is scientifically untestable. Yet this is a serious limitation of the hypothesis (when compared with other, less exotic hypotheses which have yet to be tested and rejected) rather than a limitation of the scientific method. The second point concerning a superhuman intelligence which determines its own rules is undoubtedly true. But this depends on our acceptance of the assumption that a "superhuman intelligence" is behind the UFO phenomena - an assumption which has not yet been conclusively proven.

What if UFOs turn out to be totally subjective phenomena? Can they still be scientifically studied? Gooch (1979) believes that paranormal phenomena as a whole cannot be studied scientifically in the sense that paranormal events are not repeatable and cannot be meaningfully measured. He proposes that subjective paranormal phenomena need to be studied primarily by experience rather than observation.

But there are counterexamples where subjective phenomena can be scientifically studied (e.g. psychologists' studies of altered states of consciousness) especially where there are objective physiological correlates (e.g. rapid eye movements indicative of dreams). Thus even if UFO phenomena turn out to be primarily subjective, this does not automatically preclude a scientific approach.

A Research Strategy

If we accept the scientific approach as the most valid method of studying UFO phenomena, what kind of studies can we undertake?

In a little known paper, Vallee (1975) has presented a comprehensive outline of potential research strategies. He discusses three types of strategies: theoretical (e.g. the study of physical principles such as McCampbell's studies of microwave radiation): passive (retrospective studies and catalogues) and active (field investigation).

Vallee's active research proposal is now presented in full, to be followed by my comments on the extent of progress towards these goals as achieved by present day ufology.

- "1. Systematic recruiting of reliable field investigators. One's first-hand experience with local sightings should be a greater criterion in hiring than academic degrees.
2. Training and support of these investigators through the development of standard 'field investigation' kits and better instruction for their use.
3. Establishment of a backup communication system (radio equipment, computer access to data-bases) to coordinate field research and tap into 'passive' resources.
4. Setting up of automatic photographic, magnetic, and gravity anomaly detecting stations, with standard instructions so that statistically significant conclusions can be derived from their operation.
5. Establishment and dissemination of standard procedures for collecting, handling and analyzing samples of soil and vegetable matter at UFO landing sites.
6. Standardization of procedures for photographic analysis.
7. Development of a capability for physiological study of close-encounter witnesses.
8. Development of a capability for psychological investigation of all witnesses of close-encounters." (Vallee, 1975, p 98)

It is instructive to compare this suggested research programme with ufology's progress to date. Reasonable progress has been made in connection with points 1, 2, 5 & 6. In Australia, ACUFOS has successfully established an investigator's network with the cooperation of most state groups. This has been supplemented by standardised procedures and training provided by the Basic Investigator's Guide and the Training Officer's Manual. Comparable efforts have been made by MUFON/CUFOS in the USA and UFOIN/BUFORA in the UK. Whilst information on investigative methodology has been widely circulated, the Australian ufological community's lack of funds has resulted in a lack of desirable equipment such as widely-disseminated trace sampling equipment, instrumentation for chemical/biological analysis of ground trace samples, and computer enhancement facilities for photographic analysis. American researchers appear to have fared somewhat better as far as the provision, or at least availability, of such expensive instrumentation.

As far as "passive" resources (see point 3), the Australian UFO Computer File has been established and currently holds the coded details of several hundred reports (though little use of this resource has thus far been made as far as the analysis of data variables.) Copies of "unidentified" UFO reports are on file with ACUFOS and accessible to researchers. A number of researchers have also compiled useful catalogues of various types of reports. However, an actual backup communication to coordinate field research has not been set up, although such may be relevant to the proposed rapid intervention programme which is currently being devised.

To my knowledge, point 4 has never been attempted in any substantial way in either Australia or overseas. With the exception of some thorough case studies conducted by American psychiatrist, Berthold Schwarz, points 7 & 8 have also been virtually ignored. One of my future priorities, as an individual researcher, will be to set up an Australian capability for the in-depth psychological and physiological studies of close encounter UFO percipients. Some preliminary groundwork for this has already been presented by Moravec, 1981b (see especially section on Future Research and Appendices 2 & 3).

In summary, I would recommend that Vallee's suggested research strategy (or a close variation) is worthwhile carrying out. Some progress has already been made, especially in the area of field investigation techniques and networks. Other proposals require much more work to make them operational.

I will now move on from considering an overall strategy to considering a number of specific issues relevant to present-day UFO research.

Documentation

A 1980 survey of Australian UFO researchers found, in answer to a question about the most important future tasks for ufologists, that most researchers were concerned with better investigation, documentation and research (Moravec, 1981a). Documentation of the available data is the first step in a scientific investigation. At the field investigator level, this requires standardised procedures for reliable data-gathering. In Australia, ACUFOS has coordinated the development of standardised UFO report forms, investigation techniques and guidelines for writing up reports. These standards have been circulated via the Basic Investigator's Guide.

An important issue related to documentation is the allocation of our limited resources. Previously, the norm was for an investigator to document as fully as possible every kind of UFO report ranging from the vaguest light in the sky to the most exotic close encounter. In recent years, many investigators have adopted the view that as voluntary, part-time workers in the field, their time is limited and thus most attention is paid to close encounters with a high information content. So far so good. However, there has been a recent, disturbing trend from some quarters to extend this rationale to the point of omitting to write up reports about even interesting close encounters. In its extreme form, the claim is made that since the XYZ case does not conclusively prove the existence, nature and origin of UFO phenomena, then why bother to produce a report of the case?

The answers are:

- (1) If the case is not written up soon after the investigation is substantially completed, errors of memory are likely to creep into any account later written up by the investigator.
- (2) The documentation of UFO reports should be the first priority of any UFO group. Since the investigator is presumably a member of a UFO group, it would be expected he would have some unselfish commitment to that group to document the cases he investigates.
- (3) If there is no report written up, no one else finds out about the case. Consequently, other researchers who may find the case highly relevant to their own research, miss out on potentially important data. The principle of data sharing amongst fellow researchers is seriously undermined.
- (4) The basis of any research is the report data. Recent cases are especially important since further follow-up may produce new information. In short, if there is no data, there is nothing to study. Ufology might as well close shop.
- (5) The attitude expressed above assumes that there is such a thing as a "break-through case". There may be no such thing. (More on this later).

Rapid Intervention

How can the documentation of UFO reports be improved? One way is by getting the investigator to the scene of a sighting as soon as is practically possible. An enduring problem for UFO researchers has been the time gap between a sighting and news of that sighting reaching the ufologist. In a large proportion of cases, the UFO investigator may not hear of a report until months or even years after it occurred. This problem can be reduced by educating the public to report potentially important close encounters to their local group or investigator (a major project), and by UFO investigators closely monitoring media reports and maintaining contacts with the media's more responsible representatives.

Once the sighting is known, the second problem is getting the investigator to the scene. It is expensive and time-consuming to jet off to a remote location at a moment's notice. After receiving news of a UFO report, the first priority is to determine whether it is worth following up. If possible, the witness should be contacted by telephone. If the sighting is evaluated as having a potentially high evidence and high strangeness rating, then the closest, available, qualified investigator(s) should be sent to the scene.

An effective rapid intervention programme requires adequate forward planning. The general availability, fields of specialisation, and field equipment held by each investigator should be clearly known to all involved in the programme. A system for notifying the appropriate people who could participate in the investigation needs to be established. The availability of consultants who can do the appropriate (and hopefully prompt) analyses of the data retrieved by investigators should be known. The availability of funding for financing travel and other expenses needs to be examined.

It has been suggested that ufology has made little progress because of lack of support from the scientific and political establishments towards the scientific study of UFO phenomena. This has led to a lack of hard, scientific data on UFO cases. Conceivably, a highly-trained team of investigators with an adequate range of instrumentation could reach a sighting location within hours of the event and obtain just such data. If there is such a thing as a "breakthrough case", then rapid intervention may be the strategy which succeeds in producing it.

Specialised Research

One approach to UFO research which has been very productive is specialisation. Because an individual researcher is restricted in the amount of time he can devote to research and to reading the always-increasing volume of UFO literature, and is likely, through his work and other interests, to have a specialised knowledge of some area relevant to ufology, a useful way of allocating his personal resources is by specialising in certain aspects of the UFO problem. Thus, in Australia, we have individual researchers who have specialised, amongst other things, in the study of entity reports, physical traces, and psychological/paranormal aspects.

One useful product of this specialisation has been the publication of detailed catalogues of certain types of UFO reports (e.g. Basterfield, 1980; Moravec, 1980 & 1981b; Falla, Lockwood & Pace, 1979). Catalogues of reports are useful because they attempt to collate all available information on a particular topic and specify (or should specify) the extent of documentation available and the reliability of each report. Catalogues are an important starting point in UFO study because a quality data base is required before a researcher can propose realistic hypotheses and draw valid conclusions from the data. Otherwise, the wrong data will lead to the wrong conclusions.

Broadly, one can speak of two types of specialisations: a linear specialisation whereby a researcher permanently devotes himself to one particular aspect of ufology; and a project by project specialisation whereby the researcher concentrates on one particular aspect for the limited duration of a specific project.

Instrumented Research

In the Moravec (1981a) survey of UFO researchers, it is perhaps significant to note that only one researcher emphasised instrumented research as a priority. Yet there is considerable scope for instrumented research assuming: (1) UFOs have some measurable, physical attributes: & (2) sufficient funds are available to pay for purchase or hire of the required equipment. Also, the potential scientific payoff of instrumented research is high given the objective and hopefully unambiguous data that will result.

Instrumented research was suggested as part of Vallee's active research strategy (point 4). Flap areas (locations of above-average UFO activity) provide the ideal sites for setting up instrumented recording stations. An instrumented study of a particular site would probably involve three phases:

- (1) Interviewing of all known percipients in the area and documentation of available historical data to determine if there is any unexplained residue of reports;
- (2) identification of the most active sites in the flap area, i.e. the specific sites where there appears to be the greatest chance of recurring future events; and
- (3) setting up and operation of pre-selected instrumentation such as photographic equipment and electromagnetic radiation monitors.

Interesting data has been obtained overseas by such methods, for example, by Ray Stanford's Project Starlight International and Vestigia's successful field study of the Long Valley Mystery Light (Moravec, 1981b).

Percipient Studies

Similarly, there is wide scope for in-depth studies of UFO percipients, both as individual case studies and groups compared on certain personality or behavioural characteristics. Psychological, psychiatric and physiological evaluations of individual percipients need to be carried out to determine the relevant person-factors important in UFO experiences. The study of "repeater" percipients, i.e. those percipients with a history of anomalous experiences, is an ideal type of case study. Group research projects, such as Lawson's studies of "imaginary UFO abductees", also hold considerable promise in increasing our understanding of UFO experiences. For further details on percipient studies, see Moravec (1981b).

Interdisciplinary Approaches

Should the study of UFOs also involve the study of other anomalous phenomena? In one sense, this has already been occurring by way of "fortean" researchers who have maintained an interest in a wide variety of alleged anomalies such as parapsychological phenomena, mystery animals, ancient technologies, fortean falls, disappearances, stigmata etc. This interdisciplinary approach can be justifiably

criticised as often presuming the equivalence of phenomena, for example, that UFOs and disappearances of ships, aircraft and people in the Bermuda Triangle are equally inexplicable. Research has shown this notion to be false. Thus, the Bermuda Triangle claims have been shown to be largely media creations and distortions promoted by uncritical writers (Winer, 1974 & Kusche, 1975) whereas the UFO mystery has not been successfully explained in the same terms. Incidentally, this also makes the across-the-board arguments of such groups as the USA Committee for the "Scientific" Investigation of Claims of the Paranormal redundant since they also maintain the same incorrect assumption of the equivalence of all allegedly unexplained phenomena.

In the UFO field, a frequent outcry from some people has been that we shouldn't mix UFOs with psychic phenomena or other alleged phenomena since these other phenomena are all nonsense and their inclusion will threaten what little scientific respectability has been painfully gained for ufology. It is perhaps significant that such outcries have tended to come from individuals who have never bothered to scientifically examine these "other" phenomena and their possible relationship with UFO phenomena.

In short, polarised arguments for and against interdisciplinary research have obscured the possibility that such an approach may produce useful data and understanding if pursued in a selective and scientifically cautious manner. My own efforts in the study of these "overlap" areas have shown that we can't automatically dismiss the possibilities that in some cases UFOs and paranormal phenomena, or UFOs and anthropoids, are related (Moravec, 1981b & 1980). Useful knowledge can come from a careful consideration of a number of anomalous phenomena in the light of current scientific knowledge. Another example of such an interdisciplinary approach would be research into the possible psychological mechanisms involved in UFO "abduction" experiences, out-of-body experiences, near-death experiences, drug-induced hallucinations, etc. (Moravec, 1982). If some UFO experiences do have a common origin with other anomalous phenomena (the difference in label merely reflecting a different subjective interpretation shaped by cultural expectation or belief) then it would be a mistake to study UFOs in isolation from other anomalies. The recently-established UK-based, Association for the Scientific Study of Anomalous Phenomena, may signal an increased effort towards the interdisciplinary study of anomalous experiences.

Funded Research

Having discussed a number of different research proposals, we now come to the question of how do we pay for it? Most UFO research has been, and still is, conducted by voluntary, part-time workers who pay their own way. Will it ever be possible to obtain government or private funds for UFO research? It has been done before. Project Bluebook and the Colorado Project were government-funded though the results of these projects were less than satisfactory, to say the least. On a more positive note, the GEPAN programme is sponsored by the French government. As far as private funds, the American Fund for UFO Research (FUFOR) managed, in its first year of operation, to raise over \$8,000 in tax-exempted contributions for channelling into UFO research. Project Starlight International has managed to purchase a site of several hectares as well as much expensive instrumentation through money donated by private, wealthy donors. The Fortean group, Vestigia, was able to use a van containing \$30,000 worth of electronic equipment during its study of the Long Valley "spook light".

Back in Australia, the funding situation is currently much more grim. It would be a virtual impossibility to obtain government funding for UFO research given a government committed to reducing public spending no matter what the consequences. A possible exception is by successfully applying for a literary grant. (John Musgrave was granted \$6,000 by the Canada Council to write a history of UFO research in Canada.) Similarly, efforts at obtaining funds from private companies or individuals have thus far been unsuccessful. Part of this difficulty is due to the characteristics of Australia as a country. Compared with USA, we have a small population with a small number of wealthy people. It is much harder for minority groups (such as UFO researchers) to raise funds for research.

Can anything be done to improve this sad state of affairs? It has been suggested that a tax-exempt organisation be set up in an attempt to attract funds.

However, there is no guarantee that such an organisation will attract funds. (Perhaps a survey of potential donors to see if they would donate money to a tax-exempt UFO organisation would clarify this point.) Such an organisation also requires money to be set up and maintained within government regulations - money that is currently lacking. Whilst I would encourage any non-costly efforts by those inclined to pursue ways of raising funds for Australian UFO research, I remain pessimistic that the situation will ever improve within Australia. I think that any funds we can get will come from applying to overseas funds for UFO research. That this is possible is shown by FUFOR's recent grant of \$1,000 to the refereed Italian publication, "UFO Phenomena International Annual Review".

Motivations, Assumptions and Breakthroughs

What motivates people to do UFO research? This is an important question because the answer will influence the definition of a "breakthrough" in UFO research. Some people do UFO research because they believe that the term UFO equals extraterrestrial spacecraft, and their only aim is to prove that physical spacecraft from another planet or galaxy are visiting us. What happens if UFOs do not turn out to be extraterrestrial spacecraft? What if UFOs turn out to be entirely explicable as misidentified natural or man-made objects made extraordinary only by belief. Or if UFOs turn out to be the subjective products of certain psychological processes? How would you feel? Would your beliefs and emotional investment in the UFO subject prevent you from seeing the true facts?

A related assumption is provided by the belief in a "breakthrough case". If UFOs are assumed to be a physical craft, then the assumer usually believes that someday one of these craft is going to malfunction and crash and provide conclusive proof of physical UFO reality. (Indeed, some people believe that some UFOs have already crashed and that the objects and their occupants are being secretly held in government custody.) Yet, what happens if UFOs are not physical craft? The individual with the above beliefs is destined to be forever disappointed and disillusioned. It cannot be proven that a "breakthrough case" is impossible since we do not have the power to accurately see into the future. However, the last 30 years of UFO research would suggest that the "breakthrough case" might be a myth. We should not pin our hopes on it.

An assumption automatically accepted by believers in extraterrestrial spacecraft, but also accepted by a number of more open-minded researchers, is that a residue of currently unexplained UFO reports represents a single phenomenon. This belief has been somewhat encouraged by a blind application of Occam's Razor (that the simplest explanation is the best) to mean that there must be only one phenomenon behind UFOs. This has led to speculations of extraterrestrial spacecraft, time travellers, interdimensional visitors, etc., in an attempt to pigeon-hole (sic) all of the UFO data under one exotic hypothesis. There may be no need to resort to such a highly exotic hypothesis. The residue of unexplained reports may represent a number of different but less exotic phenomena. For example, those phenomena collectively labelled as "UFOs" may actually be a mixture of ball lightning, geophysically-generated "earthquake lights", hallucinations experienced during altered states of consciousness, etc.

Throughout this paper we have looked at a number of assumptions which some people hold about UFOs and UFO research. To make these assumptions explicit, they are now summarised:

- (1) UFO phenomena cannot be studied in a scientific manner.
- (2) Subjective aspects of UFO experiences cannot be studied in a scientific manner.
- (3) Careful and prompt documentation of UFO cases is not essential.
- (4) Efforts at producing catalogues of certain types of UFO reports does not achieve anything.
- (5) Interdisciplinary approaches to research are misguided and dangerous to ufology's reputation.
- (6) UFOs are undoubtedly physical, extraterrestrial spacecraft.
- (7) The answer to the UFO mystery will be provided by a "breakthrough case".
- (8) Currently unexplained UFO reports represent a single phenomenon.

All of these assumptions are questionable and, if automatically accepted, are likely to hold us back from progress in UFO research. The recognition and control of one's own data-distorting beliefs is the first breakthrough.

References

- Basterfield, K. An Indepth Review of Australasian UFO Related Entity Reports Gosford: ACUFOS, 1980.
- Falla, G., Lockwood, C., & Pace, A. Vehicle Interference Project London: BUFORA, 1979.
- Fuller, C. (Ed.) Proceedings of the First International UFO Congress NY: Warner, 1980.
- Gooch, S. The Paranormal Glasgow: Fontana, (1978), 1979.
- Haines, R. (Ed.) UFO Phenomena and the Behavioural Scientist Metuchen, NJ: Scarecrow, 1979.
- Haines, R. Observing UFOs Chicago: Nelson-Hall, 1980.
- Hendry, A. The UFO Handbook NY: Doubleday, 1979.
- Hynek, J. The UFO Experience London: Corgi, (1972), 1974.
- Kusche, L. The Bermuda Triangle Mystery Explained NEL, 1975.
- Moravec, M. The UFO/Anthropoid Catalogue Gosford: ACUFOS, 1980.
- Moravec, M. Survey of UFO Researchers. Journal of the Australian Centre for UFO Studies vol 2 no 3, May-Jun 1981a, pp 2-5.
- Moravec, M. PSIUFO Phenomena: a Study of UFOs and the Paranormal Gosford: ACUFOS, 1981b.
- Moravec, M. The Psychology of Close Encounters (forthcoming paper), 1982.
- Vallee, J. Anatomy of a Phenomenon London: Neville Spearman, (1965), 1966.
- Vallee, J. UFO research proposals: what, who and how much? In Gurney, N. (Ed.) MUFON 1975 UFO Symposium Proceedings 1975.
- Vallee, J. & Vallee, J. Challenge to Science London: Neville Spearman, (1966), 1967.
- Winer, R. The Devil's Triangle NY: Bantam, 1974.

xxxxxxxXxxxxxxx

NOTICE TO CONTRIBUTORS

Your new editor claims to be the fastest one-finger typist in the world, but, it still takes him about an hour to type one page of this Journal, and, it makes his finger very sore. So, if you want your manuscript to be received with joy and celebration, please prepare it in such a way that it can go straight into a photocopier without having to be retyped. This means that it should be on A4 paper, with 20 mm margins all round; and typed with economy of space (not too much double-line spacing). It should also be an original, or a first class plain-paper copy.

Manuscripts not conforming to this specification will not be rejected because of it, but their publication may possibly be delayed.

xxxxxxxXxxxxxxx

ACUFOS BIBLIOGRAPHY SERVICE: INFORMATION RESOURCES - PART II

(by) John Prytz

Compiler's Note: A data base of basic reference tools, presented in the ACUFOS Journal (Nov./Dec. 1981 - p.15-16; Jan./Feb. 1982 - p.12-13) has been extended here to cover other sorts of tools and topics for the serious (or even the casual) researcher or just plain interested person who likes to keep up to date with information of personal relevance.

A) Reference Books

- 1) American Reference Books Annual:(ARBA) - Libraries Unlimited, Inc., Littleton, Colorado (annual).
- 2) Printed Reference Material - Library Association, London - 1980.
- 3) Reference Books in Paperback: An Annotated Guide - Libraries Unlimited, Inc., Littleton, Colorado - 2nd edition - 1976.
- 4) Walford's Guide to Reference Material: Vol. 1: Science & Technology - Library Association, London - 4th edition - 1980.
- 5) (Walford's) Guide to Reference Material: Vol. 2: Social & Historical Sciences, Philosophy & Religion - Library Association, London - 3rd edition - 1975.
- 6) (Walford's) Guide to Reference Material: Vol. 3: Generalities, Languages, the Arts and Literature - Library Association, London - 3rd edition - 1977.
- 7) Science and Engineering Literature: A Guide to Reference Sources - Libraries Unlimited, Inc., Littleton, Colorado - 3rd edition - 1980.

B) National Bibliographies

- 1) American Book Publishing Record Cumulative 1876-1949: An American National Bibliography - R.R. Bowker, N.Y. - 1980 - 15 Volumes.
- 2) American Book Publishing Record Cumulative 1950-1977: An American National Bibliography - R.R. Bowker, N.Y. - 1978 - 15 Volumes.
- 3) Cumulative Book Index - H.W. Wilson, N.Y. (monthly, annual).

C) Subject Indexes to Journal Articles

- 1) Art Index - H.W. Wilson, N.Y. (quarterly, annual).
- 2) Biological & Agricultural Index - H.W. Wilson, N.Y. (monthly, annual).
- 3) Business Periodicals Index - H.W. Wilson, N.Y. (monthly, annual).
- 4) Education Index - H.W. Wilson, N.Y. (monthly, annual).
- 5) Engineering Index Monthly - Engineering Index, Inc., N.Y. (monthly)
- 6) Essay and General Literature Index - H.W. Wilson, N.Y. (semi-annual annual, 5-year cumulations).
- 7) Humanities Index - H.W. Wilson, N.Y. (quarterly, annual).
- 8) Index to Legal Periodicals - H.W. Wilson, N.Y. (monthly, annual).
- 9) Social Sciences Index - H.W. Wilson, N.Y. (quarterly, annual).

D) Guides to Associations, Clubs, etc.

- 1) Directory of Associations in Canada - University of Toronto Press, Toronto - 3rd edition - 1978.
- 2) Directory of Australian Associations - Australasia Reference Research Publications, Brisbane - 2nd edition - 1981.

BIBLIOGRAPHY (cont.)

- 3) Directory of British Associations & Associations in Ireland - CBD Research Ltd, Beckenham, Kent - 6th edition - 1980.
- 4) Directory of European Associations - CBD Research Ltd, Beckenham, Kent - 2nd edition - 1979.
- 5) Encyclopedia of Associations: Vol. 1: National Organizations of the U.S. - Gale Research, Detroit, Michigan - 15th edition - 1980.
- 6) New Zealand Associations, Societies & Clubs: A National Directory - Victoria University Press, Wellington - 1979.

E) The Media

- 1) Australian Media Contact Register - Aust'n Media Contact Register, Concord West, N.S.W. (annual).
- 2) Editor & Publisher International Yearbook - Editor & Publisher, N.Y. (annual).
- 3) Margaret Gee's Media Guide - Margaret Gee Public Relations Pty Ltd, East Melbourne, Victoria - 9th edition - Mar. 1982.

F) Who's Who & Biographies

- 1) Canadian Who's Who - University of Toronto Press, Toronto (annual).
- 2) Current Biography - H.W. Wilson, N.Y. (monthly, annual).
- 3) International Who's Who - Europa Publications Ltd, London - 45th edition (1981-82).
- 4) New York Times Biographical Service - New York Times Co., N.Y. (monthly).
- 5) Who's Who (in Great Britain): An Annual Biographical Dictionary - Adam & Charles Black, London (annual).
- 6) Who's Who in America - Marquis Who's Who, Chicago, Illinois - 41st edition (1980-81) - 2 Volumes - 1980.
- 7) Who's Who in Australia - Herald & Weekly Times Ltd, Melbourne (triennial).
- 8) Who's Who in New Zealand - A.H. & A.W. Reed, Wellington - 11th edition - 1978.
- 9) American Men & Women of Science: Physical and Biological Sciences - R.R. Bowker Co., N.Y. - 14th edition - 8 Volumes - 1979.
- 10) American Men and Women of Science: Social and Behavioral Sciences - R.R. Bowker Co., N.Y. - 13th edition - 1978.
- 11) Dictionary of Scientific Biography - Charles Scribner's Sons, N.Y. - 15 Volumes - 1978.
- 12) Who's Who in Science in Europe - Francis Hodgson, Guernsey - 3rd edition - 4 Volumes - 1978.

G) Quotations

- 1) Dictionary of Contemporary Quotations - Gaylord, Syracuse, N.Y. (semiannual).

H) Public Opinion Polls - Australia

- 1) The Public Opinion - Index Press, Eltham, Victoria (annual).

I) Government Directories - Australia

- 1) Commonwealth Government Directory - Aust'n Govt. Publishing Service Canberra (annual).

BIBLIOGRAPHY UPDATESSagan, Carl - About

- 1) Kesselman-Turkel, J. & Peterson, F. - "Marketing of Dr. Carl Sagan" - Omni, June 1982 - p.44-46, 48, 114.

Cosmic Chemistry

- 1) "Cosmic soup kitchen" - Sky & Telescope, May 1982 - p.455.
- 2) Darling, D. - "Molecules between the stars" - Astronomy, March 1982 - p.82-87.
- 3) "Discovery of three 'nonterrestrial' molecules" - Mercury (Journal of the Astronomical Society of the Pacific), Sept./Oct. 1981 - p.150-151.
- 4) "Far out giant molecular clouds" - Sky & Telescope, Feb. 1982 - p.147.
- 5) Marschall, L. - "Secrets of interstellar clouds" - Astronomy, March 1982 - p.6-22.
- 6) Rawls, R. - "Search for methylene in space intensifies" - Chemical & Engineering News, 23 Aug. 1982 - p.45.
- 7) "Red giants as molecule factories" - Sky & Telescope, May 1982 - p.451.
- 8) "Scientists pinpoint new molecule in space" - ANU Reporter, 27 Aug. 1982 - p.1.
- 9) Williams, R. (Compere) - "Australian radioastronomer discovers new organic molecule in space: interview: Prof. R.D. Brown" - Science Show (ABC radio program), 26 June 1982.

Panspermia

- 1) Dagani, R. - "Scientists argue comets' role in origin of life" - Chemical & Engineering News, 24 Nov. 1980 - p.36-38.
- 2) Engel, M.H. & Nagy, B. - "Distribution and enantiomeric composition of amino acids in the Murchison Meteorite" - Nature, 29 April 1982 - p.837-840.
- 3) Kerr, R.A. - "Odd amino acids in a meteorite" - Science, 28 May 1982 - p.972.
- 4) Pillinger, C.T. - "Not quite full circle? - Non-racemic amino acids in the Murchison Meteorite" - Nature, 29 April 1982 - p.802.
- 5) Ponnamperuma, C. - "Panspermia with purpose and intent" - New Scientist, 13 May 1982 - p.435-436.
- 6) Temperley, H.N.V. - "Could life have happened by accident?" - New Scientist, 19 Aug. 1982 - p.505-506.
- 7) Wickramasinghe, N.C. - "Astronomer reflects: was Darwin wrong?" - UNESCO Courier, May 1982 - p.36-38.

Exobiology - Bibliographies

- 1) Fraknoi, A. - "Life on other worlds" - Mercury (Journal of the Astronomical Society of the Pacific), July/Aug. 1974 - p.24+.

Exobiology

- 1) Halstead, T.W. - "Exobiology" (in) - McGraw-Hill Encyclopedia of Science & Technology: Vol.12 - 5th edition - McGraw-Hill, N.Y. - 1982 - p.712-714.
- 2) "Life on a lonely planet" - Space World, Jan. 1982 - p.35.
- 3) Owen, T.C. - "Planetary atmospheres and the search for life" - Physics Teacher, Feb. 1982 - p.90-96.
- 4) Ponnamperuma, C. - "Is there life beyond Earth?" - Chemical & Engineering News, 7 Sept. 1981 - p.78-79.

BIBLIOGRAPHY UPDATES (cont.)Exobiology (cont.)

- 5) Seligman, D. - "How to read the cards" - Fortune, 8 Feb. 1982 - p.29.
- 6) Shapiro, R. - "Probing evolution's pathways on Earth - and beyond" - Chemical & Engineering News, 24 May 1982 - p.42-43.

Life in the Solar System: Mars (Post Viking)

- 1) DiPietro, V. & Molenaar, G. - "Face in space" - Omni, April 1982 - p.54-56, 107.
- 2) Gliedman, J. - "Lamarck on Mars" - Omega, Sept./Oct. 1982 - p.8.
(Also in: Science Digest, March 1982 - p.43+.)

Life in the Solar System: Jovian Planets & Satellites

- 1) "Mission on Titan" - Science Digest, Nov. 1981 - p.17.

Extraterrestrial Intelligence (ETI)

- 1) Davies, O. - "Star War" - Omni, May 1982 - p.113.
- 2) Rondinone, P. - "UFO update:(theories of Frank Tipler)" - Omni, April 1982 - p.101.
- 3) Tipler, F.J. - "Most advanced civilization in the galaxy is ours" - Mercury (Journal of the Astronomical Society of the Pacific), Jan./Feb. 1982 - p.5-11, 37.
- 4) "Tipler vs. Sagan?" - Sky & Telescope, June 1982 - p.566.

Space Colonization

- 1) Bova, B. - High Road - Houghton Mifflin, Boston - 1981.
- 2) O'Neill, G.K. - "Space colonies" (in) - 2081: A Hopeful View of the Future - Simon & Schuster, N.Y. - 1981 - p.61-75.

Astro-Archaeology

- 1) Gingerich, O. - "Archaeoastronomers convene in Oxford" - Sky & Telescope, Jan. 1982 - p.7-10.
- 2) Stephenson, R. - "Skies of Babylon" - New Scientist, 19 Aug. 1982 - p.478-481.
- 3) "Telling time with Venus" - Omega, Sept./Oct. 1982 - p.28.
- 4) Urton, G. - At the Crossroads of the Earth and the Sky - Texas University Press, Austin, Texas - 1982.

Unidentified Flying Objects (UFOS)

- 1) Chalker, B. - "UFOS: Australia's secret documents revealed" - Omega, Sept./Oct. 1982 - p.22-25, 117, 125.
- 2) Davis, J. - "UFO counseling" - Omni, July 1982 - p.93.
- 3) Furst, A. - "UFO update:(Budd Hopkins & UFO Abductions)" - Omni, May 1982 - p.111.
- 4) Hynek, J.A. - "Unidentified flying objects (UFO)" (in) - McGraw-Hill Encyclopedia of Science and Technology: Vol.14 - 5th edition - McGraw-Hill, N.Y. - 1982 - p.242.
- 5) Jason, K. - "Huge UFO" - Omni, April 1982 - p.103.
- 6) Johmann, C.A. - "UFO update:(Brazilian sighting: 7 Feb. 1982)" - Omni, June 1982 - p.109.
- 7) Rondinone, P. - "UFO world record" - Omni, May 1982 - p.114.
- 8) Sanarov, V.I. - "On the nature and origin of flying saucers and little green men" - Current Anthropology, April 1981 - p.163-167.

BIBLIOGRAPHY UPDATES (cont.)Unidentified Flying Objects (UFOS) (cont.)

- 9) "Saucer as big as a bullring" - Economist, 20/26 Dec. 1980 - p.36.
- 10) Solomon, S. - "Seismic fireballs" - Science Digest, Nov. 1981 - p.92.
- 11) Weintraub, P. - "UFO update:(classified American UFO documents)" - Omni, July 1982 - p.91.
- 12) Wendt, J. (Compere) - "Earthquake lights and the UFO Phenomena" - Sixty Minutes (television program - Aust'n edition), 1 August 1982. (Discussion: 8 August 1982).

Tunguska, Siberia Event (1908)

- 1) Davis, J. - "Tunguska and ozone" - Omni, May 1982 - p.45.
- 2) "Tunguska meteorite and atmospheric ozone" - Sky & Telescope, Jan. 1982 - p.14.

Monsters

- 1) Burton, M. - "Loch Ness saga" - New Scientist, 24 June 1982 - p.872; 1 July 1982 - p.41-42; 8 July 1982 - p.112-113. (Discussion: 19 Aug. 1982 - p.516.)
- 2) Craig, R.P. - "Chasing the Log Ness Monster" - Bulletin, 28 Sept. 1982 - p.95-96.
- 3) Craig, R.P. - "Loch Ness: the monster unveiled" - New Scientist, 5 Aug. 1982 - p.354-357.
- 4) Greenwell, J.R. - "Champlain monster meeting" - Omni, April 1982 - p.104.

Artificial Intelligence

- 1) "Can computers learn?" - World Press Review, April 1982 - p.34-35.
- 2) Cornish, B.M. - "Smart machines of tomorrow" - Futurist, Aug. 1981.
- 3) de Solla Price, D. - "3-D intelligence" - Omega, Sept./Oct. 1982 - p.44, 46.
- 4) Herman, R. - "Computers on the road to intelligence" - New Scientist, 5 Aug. 1982 - p.358-361.
- 5) Marsh, P. - "Race for the thinking machine" - New Scientist, 8 July 1982 - p.85-87.
- 6) Penzias, A.A. - "Friendly interfaces" - Technology Review, Jan. 1982 - p.30-31.
- 7) Rauzino, V. - "Conversations with an intelligent chaos" - Datamation, May 1982 - p.122-124, 126, 128, 131, 134, 136.
- 8) Roberts, S.K. - "To teach a machine" - Technology Review, Jan. 1982 - p.22-29.
- 9) "Why can't a computer be more like a man?" - Economist, 9 Jan. 1982 - p.75-79.